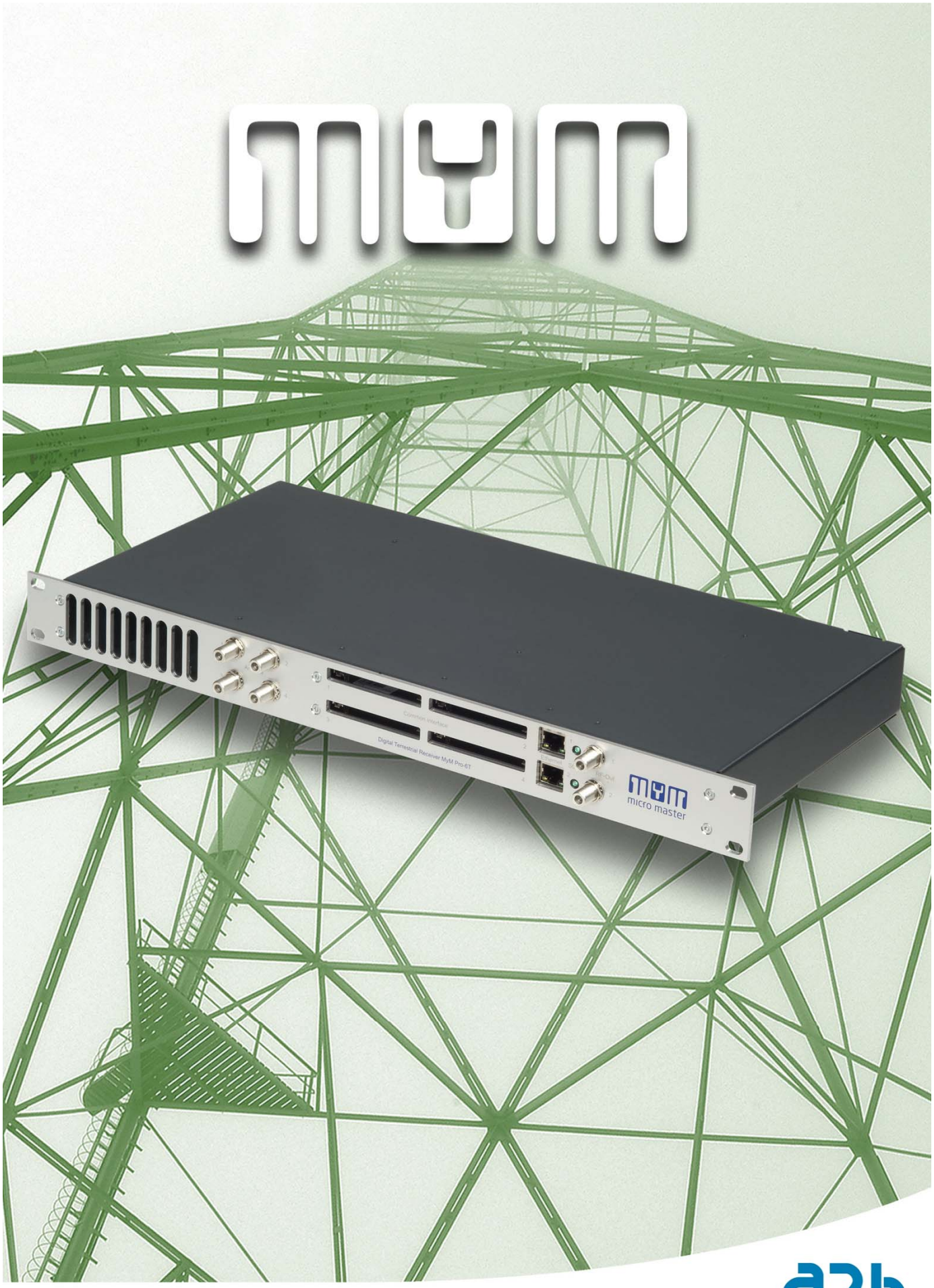

MyM Pro T2 Installation guide

a2b design for TV

CONTENT

1. Introduction
2. Unpacking the unit
3. Connections and indications
4. IP settings
5. Menus and settings web ui
   - 5.1 Overview menu
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   - 5.3 Output settings
   - 5.4 Service management
   - 5.5 CI menu
   - 5.6 System options
6. Installation and Configuration examples
7. Technical specification MyM Pro T2
8. Declaration of conformity
9. Abbreviations

1 Introduction

Thank you for purchasing an A2B Electronics product. The MyM Pro T2 is a revolutionary solution for reception and modulation both from satellite or from terrestrially transmitted TV content into an analogue format suited for small SMATV networks where cost efficiency and high quality is required.
The MyM Pro T2 has a multifunctional tuner that receives DVB-S/S2 and DVB-T/T2 transmissions.

The MyM Pro T2 unit is delivered with hardware and software that supports MPEG2/MPEG4 decoding, HD downscaling, DSB RF modulation with NICAM or A2 audio, IP control and management.
The MyM Pro T2 can be upgraded for enhanced functionality by software upgrades.

Software upgrades are available from A2B Electronics web site.

A2B Electronics AB
Phone: +46 (0)141 229115
E-mail: support@a2b.se

Visit our web site www.a2b.se for more information.

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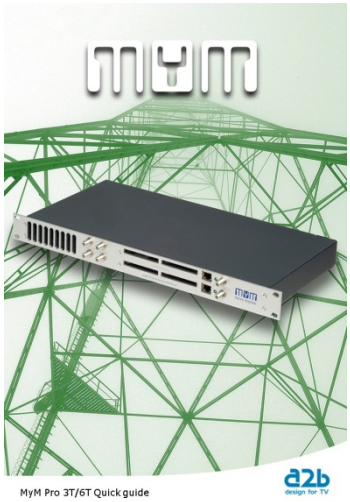
VIEW TRAILER
CHAMELEON
Chameleon
The Chameleon is a single HW product line. The Chameleon products are HE modules, and each Chameleon has the capability to do all the processing from input to output; RF/IP reception, demodulation, decryption, PSI/SI processing and generation, (re) multiplexing, encapsulation/modulation and HD downscaling.
Each Chameleon have "double channel" capacity; double tuners, multiple TS processing, double modulators with up to qaud RF outputs (QAM).
EXM series
The EXM series includes ESX-200 which is a satellite processor with DVB-S and DVB-S2 tuner, ETX-200 that is a terrestrial processor for DVB-T and ECX-200 including a cable processor. Analogue VSB, COFDM, QAM or IPTV outputs are available in all units.
All units can be upgraded with sw options for IPTV in, Simulcrypt, CryptoLite and BISS encryption.
Read more
NEWS
MyM-3S Micro Head End now available
2011-09-26
When analogue switch over happens not only in terrestrial networks,but also over satellite the new MyM-3S is the perfect solution for SMATV and hospitality applications where low cost, high performanceand ease of use are essential.
MyM-3S receives 2 satellite transponders and converts 3 programs to analogue PAL or SECAM RF on the output.
Product information
Read more

2 Unpacking the unit

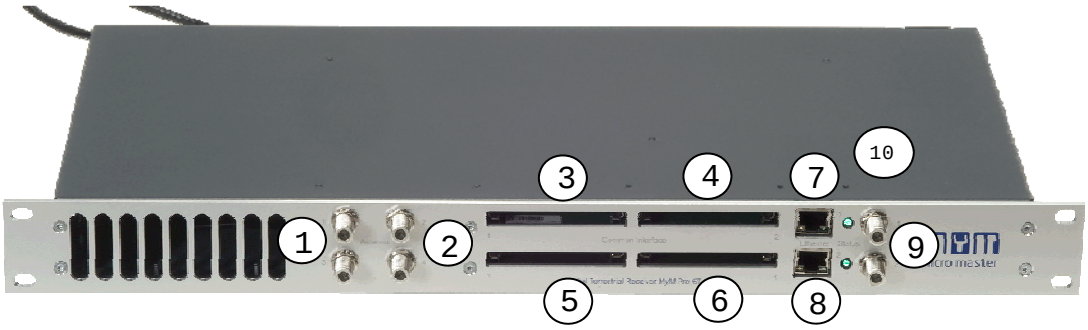
The following items are included in the package:

Amount	Description
1	MyM Pro T2
1	Quick guide

Every unit is quality controlled by us before delivery. Should any items be missing when unpacking, please contact our support service (see page 3 for contact info).



3 Connections and indications



1. Antenna input 1	Connect the satellite/terrestrial signal for Ch1 and Ch2 here
2. Antenna input 2	Connect the satellite/terrestrial signal for Ch3 here
3. Common Interface 1	Insert a Common Interface module into this slot (Supports decryption for Channel 1 and 2)
4. Common Interface 2	Insert a Common Interface module into this slot (Supports decryption for Channel 3)
5. Common Interface 3	Insert a Common Interface module into this slot (Supports decryption for Channel 4 and 5)
6. Common Interface 4	Insert a Common Interface module into this slot (Supports decryption for Channel 6)
7 and 8. Ethernet ports	RJ-45 port for 10/100 baseT Ethernet. Connect your PC to these ports for management and upgrades.
9. RF-output(s)	Combined 3 channel RF outputs for connection to your SMATV network.
10. Indicator LED(s)	Status indicator. Green flashing LED says all channels are OK. Red flashing LED says one or more channels are not decoding video. ***NOTE! If only two channels are used the Video WD shall be set to "OFF" for the non used channel to get green LED (see page 12)***

4 IP settings

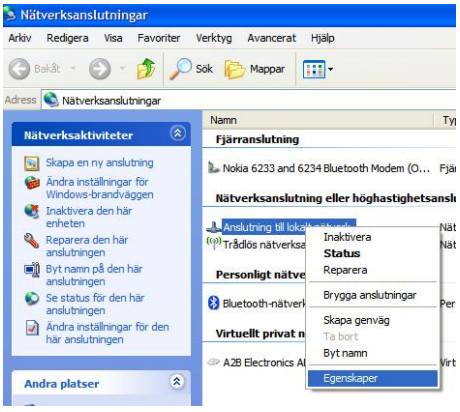
The MyM Pro T2 has an embedded web server allowing web browser Internet Explorer to connect to the unit for settings and management. No controller software is needed. The MyM Pro T2 has by default static IP address(es) for connecting your PC to the unit.

NOTE! MyM Pro T2 is only approved with Internet Explorer as web browser.

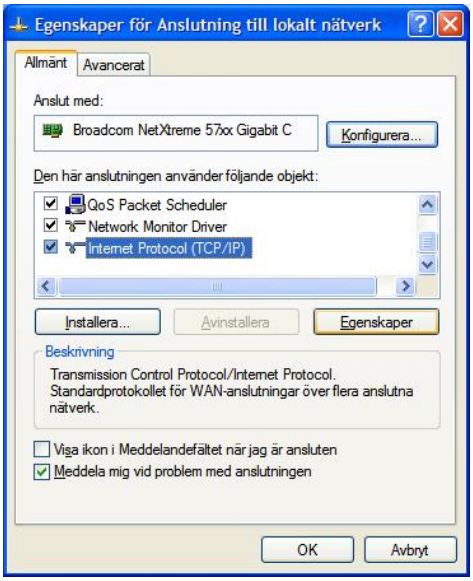
The MyM Pro T2 is delivered with the default IP address: 192.168.0.20 for port 1 and 192.168.0.21 for port 2 in 6T.
First time installation requires that you set a static IP address on your computer. For example set your PC to IP address: 192.168.0.19 and Net mask: 255.255.255.0

TCP/IP settings for Windows XP (setting your PC to 192.168.0.19)

Select ”Start”, ”Control panel” and ”Network connections”. Next select “Network and Internet settings”. ”Right click” on [Settings for local network] and select [Properties].



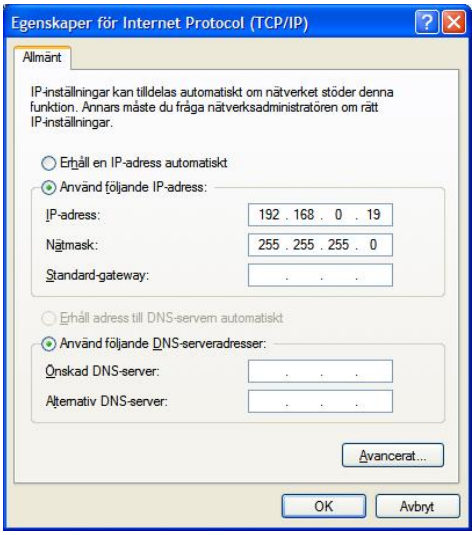
In Properties select [Internet protocol (TCP/IP)] and [Properties].



4 IP settings (continued)

Select [Use this IP adress] and write: 192.168.0.19 and select [Net mask] 255.255.255.0. Click [OK] and then click [Close].

NOTE! For PC with other Operating Systems (OS) than Windows, please consult the Owners manual for your PC for [IP/Network settings].


Egenskaper för Internet Protocol (TCP/IP)
Allmänt
IP-inställningar kan tilldelas automatiskt om nätverket stöder denna funktion. Annars måste du fråga nätverksadministratören om rätt IP-inställningar.
Erhåll en IP-adress automatiskt
Använd följande IP-adress:
IP-adress: 192 . 168 . 0 . 19
Nätmask: 255 . 255 . 255 . 0
Standard-gateway:
Erhåll adress till DNS-servern automatiskt
Använd följande DNS-serveradresser:
Önskad DNS-server:
Alternativ DNS-server:
Avancerat...
OK
Avbryt

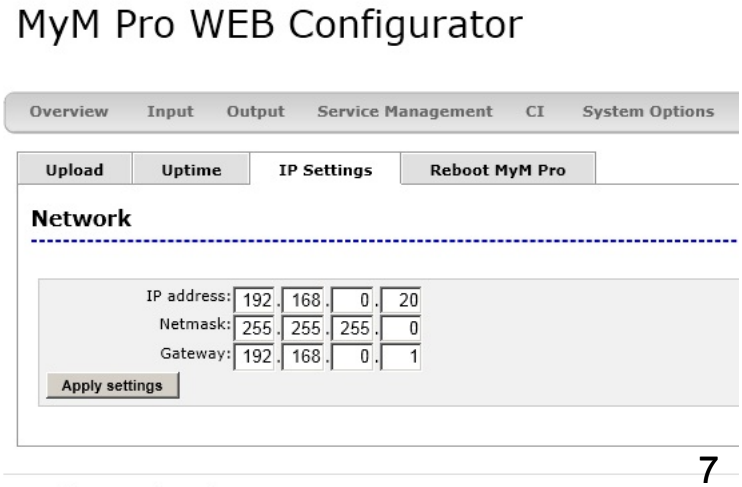
Connecting your PC to the MyM Pro T2

Connect the MyM Pro T2 double power cords to a wall outlet.
See section 6 for installation.
Next connect your PC to the MyM Pro T2 with a network cable.
Start your web browser 1) and write the IP address 192.168.0.20 and 192.168.0.21 for second port *) in the address field of your browser.

1) **MyM Pro is only approved with Internet Explorer**

Settings of IP address

Click the **[System options]** menu and then press **[IP Settings]** to set a new IP address, Netmask and Gateway for the MyM Pro T2.



*) MyM Pro 6T

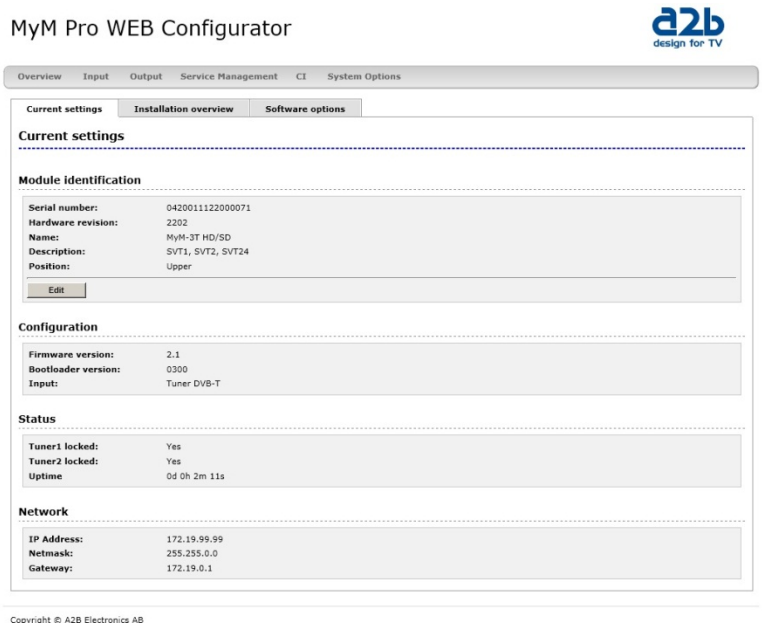
5 Menus and settings

All necessary settings can be made in the web GUI via a web browser. When first connection is made with the MyM Pro T2 following overview menu will appear.

5.1 Overview menu

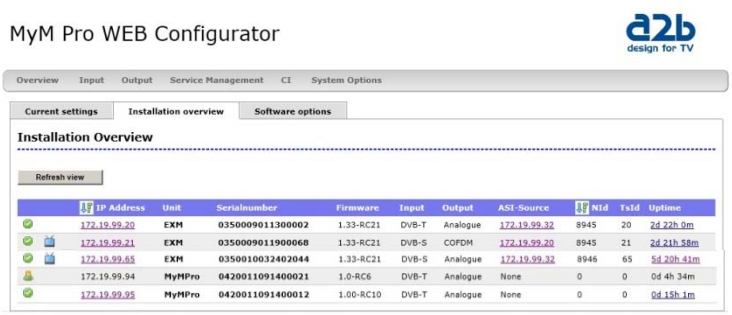
Current settings

Contains information of current input and output signals, if the tuners are locked to a signal, firmware version, bootloader version, hardware revision, serial number and current IP Network settings.



Installation overview

In this menu you can see all MyM Pro units when connected to a switch and also see EXM/OXM units that are connected to the same switch.


MyM Pro WEB Configurator
a2b design for TV
Overview
Input
Output
Service Management
CI
System Options
Current settings
Installation overview
Software options
Installation Overview
Refresh view
IP Address Unit Serialnumber Firmware Input Output ASI-Source NId TsId Uptime
172.19.99.20 EXM 0350009011300002 1.33-RC21 DVB-T Analogue 172.19.99.32 8945 20 2d 22h 0m
172.19.99.21 EXM 0350009011900068 1.33-RC21 DVB-S COFDM 172.19.99.20 8945 21 2d 21h 58m
172.19.99.65 EXM 0350010032402044 1.33-RC21 DVB-S Analogue 172.19.99.32 8946 65 5d 20h 41m
172.19.99.94 MyMPro 0420011091400021 1.0-RC6 DVB-T Analogue None 0 0 0d 4h 34m
172.19.99.95 MyMPro 0420011091400012 1.00-RC10 DVB-T Analogue None 0 0 0d 15h 1m

Software options

In this menu you can see which software options that are activated.

To continue with settings click the **[Input]** name in the banner.

5.2 Input settings

As the MyM Pro T2 contains ”multituner” start by selecting either DVB-T/T2 or DVB-s/S2. After that you choose **[Tuner 1]** or **[Tuner 2]** for settings of the tuner parameters.

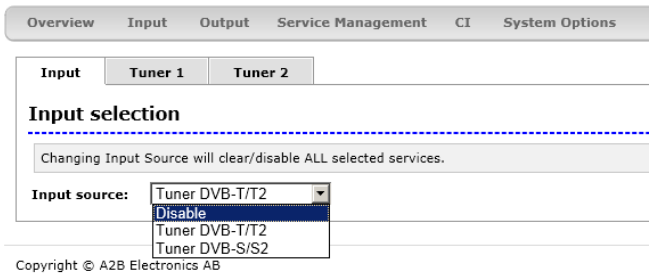
Tuner 1 provides the service list for RF output Ch1 and Ch2. Tuner 2 provides the service list for RF output Ch3.

[Bandwidth] can be selected between 6, 7 or 8 MHz. Select input channel from **[Channel name]** scroll list or write the center frequency of the wanted Mux and press **[Set].**

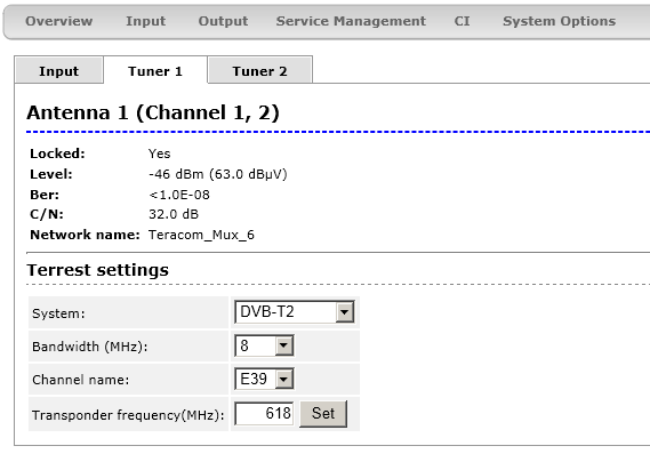
If you have an MyM Pro 6T proceed with next two tuners **[Tuner 3]** and **[Tuner 4]** after moving the TP cable to the other RJ 45 port (if not using switch). Tuner 3 provides the service list for RF output Ch4 and Ch5. Tuner 4 provides the service list for RF output Ch6.

NOTE! Don’t press [Set] if channel is chosen from the scroll list.

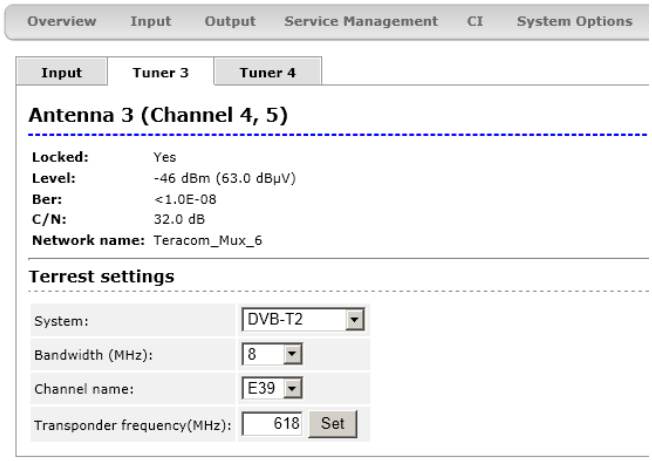
MyM Pro WEB Configurator



MyM Pro WEB Configurator



MyM Pro WEB Configurator



5 Menus and settings (continued)

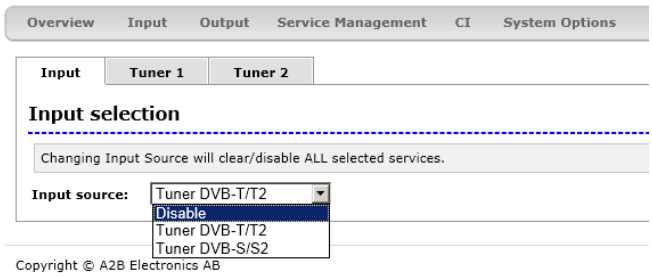
5.2 Input settings cont.

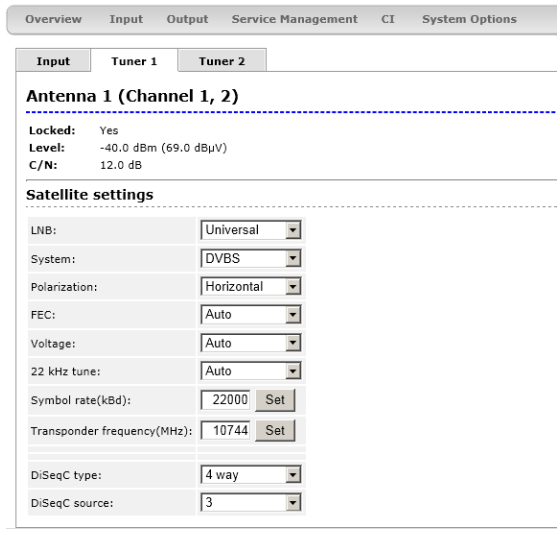
For receiving from satellite, start with chosing **[Tuner 1]** or **[Tuner 2]**. Tuner 1 provides the service list for RF output Ch1 and Ch2. Tuner 2 provides the service list for RF output Ch3. The tuner can also be ”Disabled”.

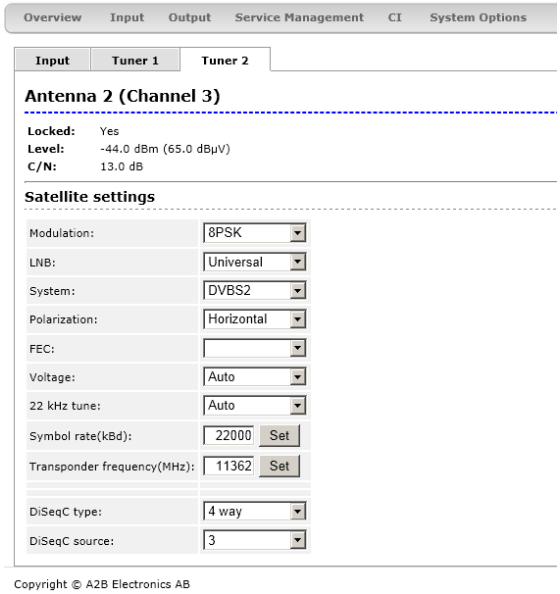
Select the actual Input parameters for the satellite transponder you receive. After the tuner has locked you can read the values for **[Locked]**, **[Level]** and **[C/N]**.

If you have an MyM Pro 6S proceed with next two tuners **[Tuner 3]** and **[Tuner 4]** after moving the TP cable to the other RJ 45 port (if not using switch). Tuner 3 provides the service list for RF output 4 and 5. Tuner 4 provides the service list for RF output 6.

MyM Pro WEB Configurator


Overview Input Output Service Management CI System Options
Input Tuner 1 Tuner 2
Input selection
Changing Input Source will clear/disable ALL selected services.
Input source: Tuner DVB-T/T2
Disable
Tuner DVB-T/T2
Tuner DVB-S/S2
Copyright © A2B Electronics AB





5.3 Output settings

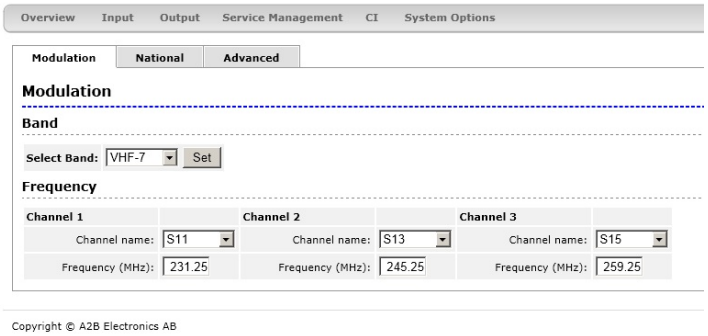
Modulation

Band
Start the output setup by selecting which band you want to use. You can select VHF-7, VHF-8 and UHF. VHF-7 and VHF-8 corresponds to 7 and 8 MHz bandwidth. After selection press **[Set].**

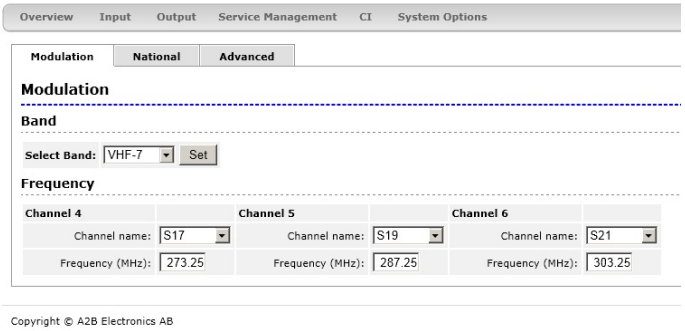
Frequency
For each of the 3 (or 6) possible RF output channels, set the desired output channels by using **[Channel name]** scroll list or write the frequency.

NOTE! The MyM Pro provides DSB modulation so you can't use adjacent channels.

MyM Pro WEB Configurator



MyM Pro WEB Configurator



National

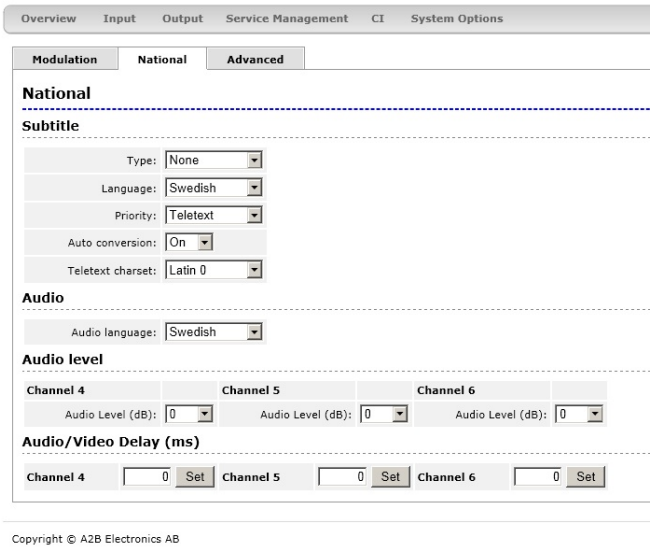
Subtitle / Type
Set type of subtitling to Normal or for Hearing Impaired or None.

Language
Select subtitling language. Depends of received languages in the terrestrial signal.

Priority
Set DVB or Teletext subtitling as default selection.

Audio / Video Delay (ms)
This is automatic. However, if you experience a lip-sync delay problem you can set delay between 200ms and -200ms individually for each Channel

MyM Pro WEB Configurator



5.3 Output settings continued

National (continued)

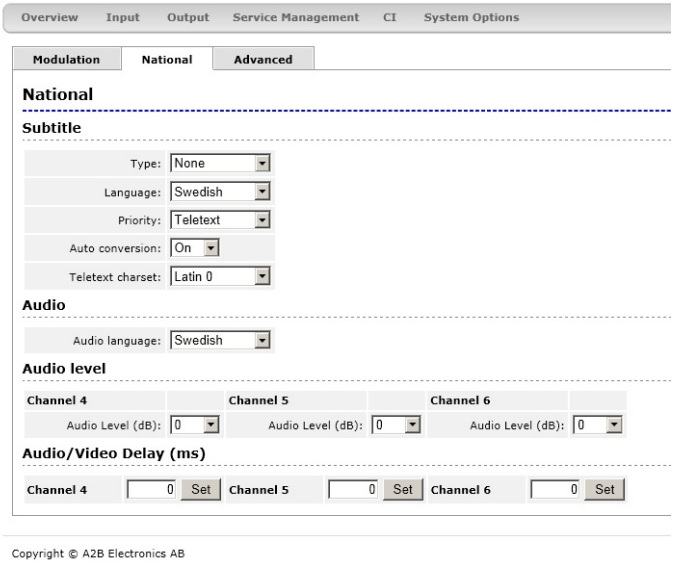
Auto conversion
Setting this in position “On” converts subtitling to fit actual picture aspect ratio if needed.

Teletext Charset
Select appropriate characters for selected language.

Audio /
Audio language
Select which language to receive and transmit on the outgoing programs.

Audio level
This setting allows to equalise the difference in sound level between different programs. Settings can be done between +6 and -6 dB.

MyM Pro WEB Configurator



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Advanced

Aspect ratio
Set correct picture format of the programs transmitted from the MyM Pro T2.

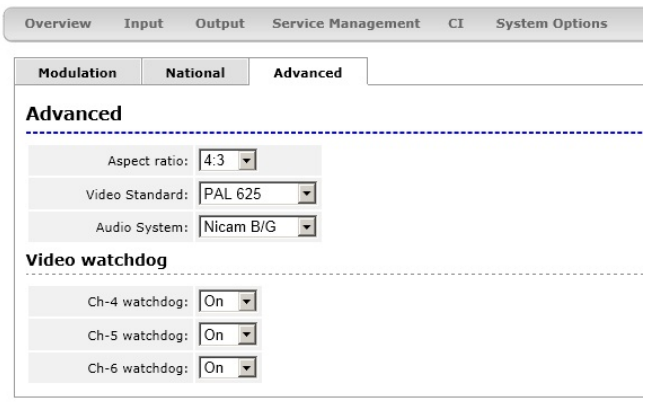
Video standard
Select your regional video standard.

Audio system
Set your regional audio standard.

Video watchdog
Here you can switch the video WD On or Off. This can be useful for example if authorisation of a new smartcard is hard to achieve. A non used channel shall be set to “OFF” to avoid rebooting of the unit.

NOTE! Changing this setting will only take effect if a reboot is done after the change.

MyM Pro WEB Configurator



Copyright © A2B Electronics AB

5.4 Service Management

The MyM Pro 3T contains 2 and for MyM Pro 6T 4 separate DVB-T tuners and totally 3 or 6 services can be selected for each of the output channels, named **[CH-1], [CH-2]** and **[CH-3]** and for MyM Pro 6T also **[CH-4]**, **[CH-5]** and **[CH-6]**.

The list of services presents all received services from both tuner inputs. Service from Tuner 1 is named “Tuner1” and services from Tuner 2 is named “Tuner2” respectively “Tuner 3” and “Tuner 4” in a 6T.

When one program (service) is selected, the box in front of the program name changes colour to green. The service list gives following information:

Selected service Green colour indication

Type Shows type of service (MPEG-2, MPEG-4, Data etc.)

Name Program name

Provider Name of operator

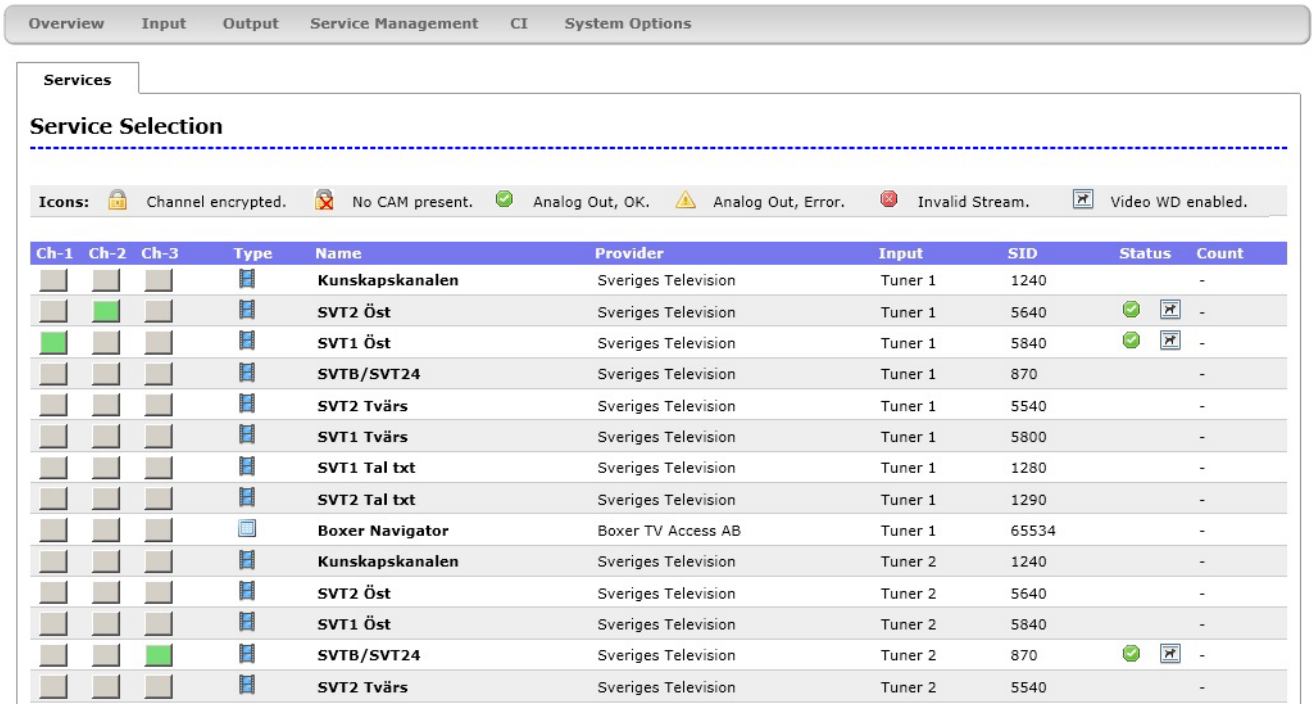
Input Indicates what tuner input the service is received from.

SID Service ID number (as received)

Hanglock Shows if service is encrypted or not and if CAM is inserted

Status Icons for Analogue out and watchdog enabled

Count Counts if there is a fault in the video decoding



Ch-1	Ch-2	Ch-3	Type	Name	Provider	Input	SID	Status	Count
				Kunskapskanalen	Sveriges Television	Tuner 1	1240		-
				SVT2 Öst	Sveriges Television	Tuner 1	5640		-
				SVT1 Öst	Sveriges Television	Tuner 1	5840		-
				SVTB/SVT24	Sveriges Television	Tuner 1	870		-
				SVT2 Tvärs	Sveriges Television	Tuner 1	5540		-
				SVT1 Tvärs	Sveriges Television	Tuner 1	5800		-
				SVT1 Tal txt	Sveriges Television	Tuner 1	1280		-
				SVT2 Tal txt	Sveriges Television	Tuner 1	1290		-
				Boxer Navigator	Boxer TV Access AB	Tuner 1	65534		-
				Kunskapskanalen	Sveriges Television	Tuner 2	1240		-
				SVT2 Öst	Sveriges Television	Tuner 2	5640		-
				SVT1 Öst	Sveriges Television	Tuner 2	5840		-
				SVTB/SVT24	Sveriges Television	Tuner 2	870		-
				SVT2 Tvärs	Sveriges Television	Tuner 2	5540		-

NOTE! To detect whether a Common Interface module and smart card actually decrypts the programs is only possible by watching the outgoing signal on a TV-set tuned to the correct frequency.

5 Menus and settings (continued)

5.5 CI menu

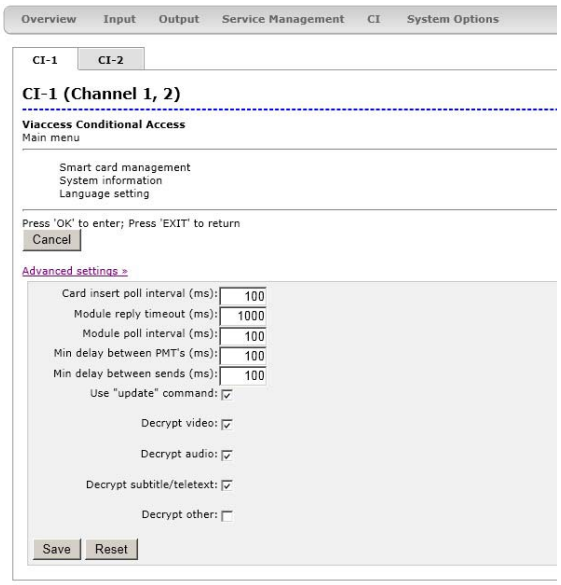
The MyM Pro 3T contains 2 CI (Common Interface) and MyM Pro 6T contains 4 CI (Common interface). **[CI-1]** decrypts services for output CH-1 and CH-2. The **[CI-2]** decrypt services for output CH-3.

In MyM Pro 6T **[CI-3]** decrypt services for CH-4 and CH-5 and **[CI-4]** decrypt service for CH-6In menu you get information about CAM and card.

In the Advanced settings menu you can change timing settings for the used CAM if there is a need for changing that. After a change is made the **[Save]** button must be clicked. If changes are made and does not work, you can get the default settings again by a click on the **[Reset]** button and a click on the **[Save]** button.

NOTE! If one change CAM to another CA system (i.e. from NDS to Conax) the unit needs to be rebooted. Decryption may take some seconds before it starts.

MyM Pro WEB Configurator



MyM Pro WEB Configurator

5.6 System options

Upload / Upgrade

The Upgrade menu is used to be able to download software Upgrades or future software functionality.

The procedure of downloading a new software looks as described below:

1.Download the appropriate file from our web page to your PC.

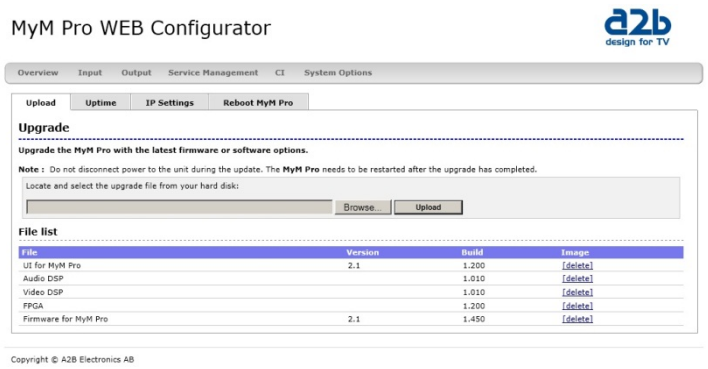
2.Browse for the file in the MyM Pro T2 user Interface.

3.Press [Upload]

4.Wait until message shows up, “Upload completed”.

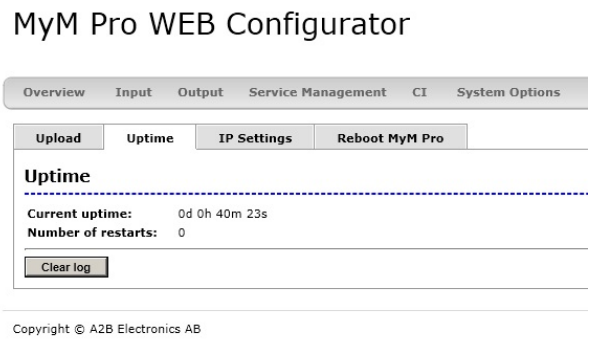
5.Click on **[Restart]** to reboot the MyM Pro T2.

The Upload menu shows current files downloaded into the units and can be useful when contacting A2B support.


MyM Pro WEB Configurator
Overview Input Output Service Management CI System Options
Upload Uptime IP Settings Reboot MyM Pro
Upgrade
Upgrade the MyM Pro with the latest firmware or software options.
Note : Do not disconnect power to the unit during the update. The MyM Pro needs to be restarted after the upgrade has completed.
Locate and select the upgrade file from your hard disk:
Browse... Upload
File list
File Version Build Image
UI for MyM Pro 2.1 1.200 [delete]
Audio DSP 1.010 [delete]
Video DSP 1.010 [delete]
FPGA 1.200 [delete]
Firmware for MyM Pro 2.1 1.450 [delete]
Copyright © A2B Electronics AB

Uptime

The Uptime menu gives statistics of uptime and possible restarts. The log can be cleared by click on **[Clear log]**.


MyM Pro WEB Configurator
Overview Input Output Service Management CI System Options
Upload Uptime IP Settings Reboot MyM Pro
Uptime
Current uptime: 0d 0h 40m 23s
Number of restarts: 0
Clear log
Copyright © A2B Electronics AB

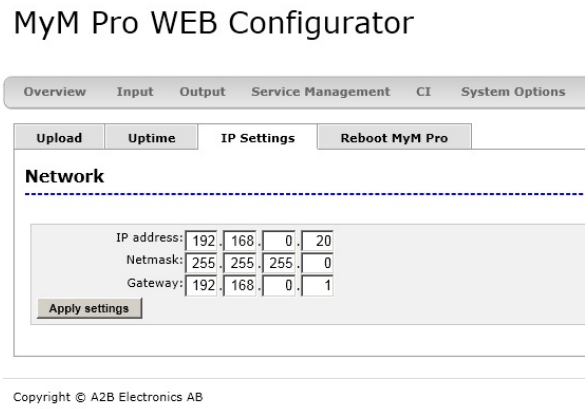
IP settings

This section shows current IP-address, Netmask and Gateway settings.

Remember to change settings if the default IP-address is used by other devices in your network.

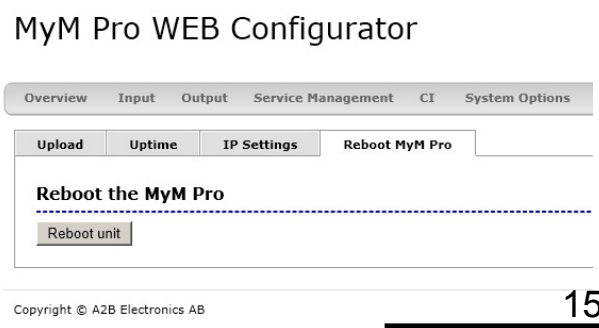
In case you have forgotten your IP-address please consult the A2B support web site and download free of charge our tool “IP-supporter”. This tool finds all MyM Pro T2 and their respective IP-addresses available in your network.

Also remember to press **[Apply settings]** when ready.


MyM Pro WEB Configurator
Overview Input Output Service Management CI System Options
Upload Uptime IP Settings Reboot MyM Pro
Network
IP address: 192 . 168 . 0 . 20
Netmask: 255 . 255 . 255 . 0
Gateway: 192 . 168 . 0 . 1
Apply settings
Copyright © A2B Electronics AB

Reboot MyM

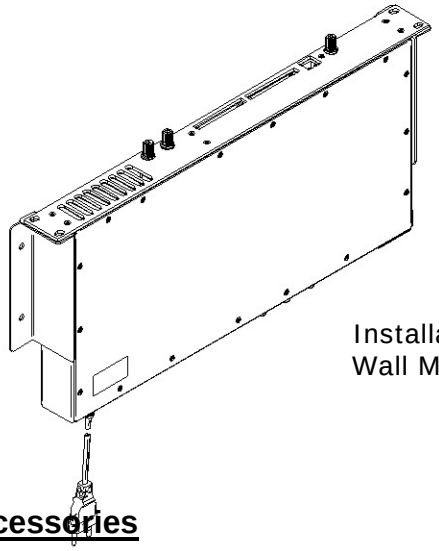
Pressing **[Reboot unit]** re-starts the MyM Pro T2. All settings are preserved so no settings or programs will be lost.


MyM Pro WEB Configurator
Overview Input Output Service Management CI System Options
Upload Uptime IP Settings Reboot MyM Pro
Reboot the MyM Pro
Reboot unit
Copyright © A2B Electronics AB

6 Installation and configuration

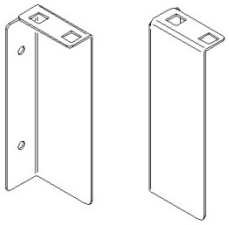
The MyM Pro T2 can be installed either as a stand alone unit directly on the wall by the use of a dedicated MyM Pro T2 Wall Mount brackets (part number 702800.10) or in an 19 inch cabinet.

Before connecting power to the MyM Pro T2, make sure that all other connections have been made. A coaxial cable of good quality with an F-connector should be connected to the Antenna input and another one from the RF output to the SMATV network.
Make all necessary settings as described in section 4 and 5.

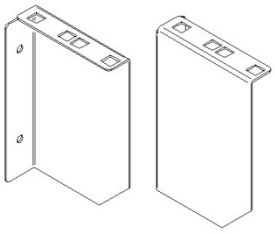


Installation with MyM Pro 3T Wall Mount kit 1 unit.

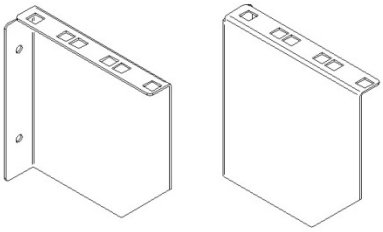
Accessories



MyM Pro 3S/6S Wall Mount kit 1 unit including screws and nuts
Art no: 121401.10



MyM Pro 3S/6S Wall Mount kit 2 units including screws and nuts
Art no: 121402.10



MyM Pro 3S/6S Wall Mount kit 3 units (for two MyM and one switch) including screws and nuts.
Art no: 121403.10

7 Technical specification MyM Pro T2

2 / 4 x DVB-T Terrestrial Receiver

Number of tuners	2/4 T2
Input frequency	47- 862MHz
Connector	Type F female, 75 Ω
Input level	40 – 70 dBuV
Bandwidth	Selectable 6,7 or 8 MHz
FEC	Auto
GI	Auto
Modes	2k and 8k

3 / 6 x MPEG Decoder – Video - audio

Video standard	MPEG2 MP@ML, MPEG4 h.264 AVC MP@L3
Audio standard	AAC HE or MPEG 1 layer II
Picture aspect ratio	Letterbox, Anamorphic
Teletext	VBI
Subtitling	Teletext or DVB subtitling

3 / 6 x Modulator

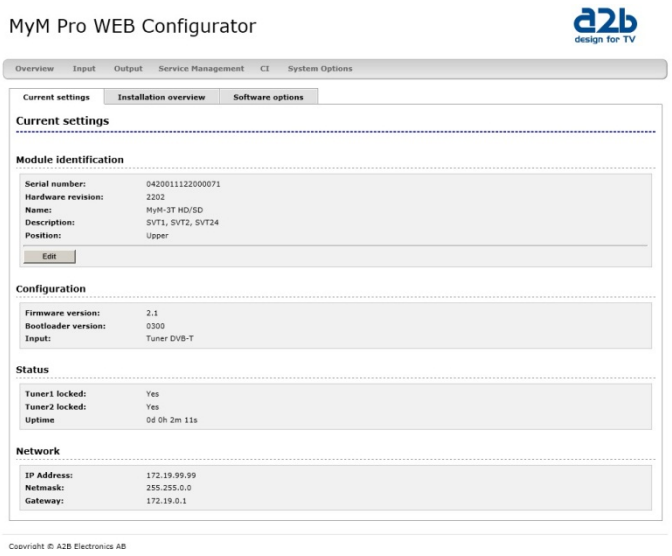
Modulation standard	PAL B/G, I, D/K, SECAM (DSB)
Audio	FM-mono, NICAM stereo and A2/A2* stereo
Output channels	Double side band from 160 – 862 MHz.
Output level	Min. 80 dBµV, fixed
RF output connector	Type F female, 75 Ω

Decryption

Decryption Interface	2/4 x Common Interface (PMCIA 5VDC)
Decryption type	Single or Multidecryption CAM's supported
CI 1 slot (3/6T)	Decryption for output Ch1 and Ch2
CI 2 slot (3/6T)	Decryption for output Ch3
CI 3 slot (6T)	Decryption for output Ch4 and Ch5
CI 4 slot (6T)	Decryption for output Ch6

Miscellaneous

AC Power supply	230 VAC typ (94-264VAC)
AC power consumption 3T	Typ. 18 W
AC power consumption 6T	Typ. 36 W
Ethernet port	Setup and update
Setup	Web based GUI
Dimension	383x220x44 mm (excl. connectors)
Weight	Approx. 3,2 kg
Operating temperature	-20 to +45°C non condensing



Example of MyM Pro T2 Web GUI

8 Declaration of Conformity

The document for Declaration of Conformity is available for download from www.a2b.se.

Further information at www.a2b.se.

9 Abbreviations

DVB	Digital Video Broadcasting (Standardization body)
MPEG-2	Compression format for digital TV
MPEG-4	Compression format for digital TV (SD and HD)
DSB	Double Side Band (RF modulation occupying 2 channels)
NICAM	Digital sound format for analogue TV transmission
IP	Internet Protocol (defines how data is packetized for Internet broadcast)
DVB-S	Modulation format (QPSK) for satellite transmission of digital TV
DVB-S2	Modulation format (QPSK or 8PSK) for satellite transmission of digital TV
DHCP	Dynamic Host Configuration Protocol is a protocol used by networked devices (*clients*) to obtain the parameters necessary for operation in an Internet Protocol network. This protocol reduces system administration workload, allowing devices to be added to the network with little or no manual configuration.
Common Interface	Connector for a PCMCIA module used for decrypting encrypted TV programs. Modules should comply with the DVB CI standard
SD	Standard definition TV (576i in Europe)
SMS	Service Management System (system for handling smartcards).
SMATV	Satellite Master Antenna TV.
A2	Dual sound analogue stereo audio
LNB	Low Noise Block (outdoor unit for sat. Reception)
GUI	Graphical User Interface
QAM	Quadrature Amplitude Modulation (digital modulation method)
QPSK	Quadrature Phase Shift Keying (digital modulation method)
8 PSK	Eight Phase Shift Keying (digital modulation method)
FEC	Forward Error corection (digital error correction method for digital transmissions)
C/N	Carrier to Noise ratio (defines the difference in dB between digital signal and noise level
AAC-HE	Digital sound compression standard
VBI	Vertical Blanking Interval. Part in video signal non-visible
CAM	Conditional Access Module (see above Common Interface)

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